



PCT10

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/009,945

DATE: 08/14/2002

TIME: 11:43:30

Input Set : A:\10624092999.txt

Output Set: N:\CRF4\08142002\J009945.raw

p.6

3 <110> APPLICANT: Thomsen, Gerald  
4 Wrana, Jeffery  
6 <120> TITLE OF INVENTION: ANTAGONISTS OF BMP AND TGF-BETA SIGNALING PATHWAYS  
8 <130> FILE REFERENCE: 10624-092  
C--> 10 <140> CURRENT APPLICATION NUMBER: US/10/009,945  
C--> 10 <141> CURRENT FILING DATE: 2002-06-21  
10 <160> NUMBER OF SEQ ID NOS: 13  
12 <170> SOFTWARE: PatentIn version 3.1  
14 <210> SEQ ID NO: 1  
15 <211> LENGTH: 2172  
16 <212> TYPE: DNA  
17 <213> ORGANISM: Homo sapiens  
19 <220> FEATURE:  
20 <223> OTHER INFORMATION: Human Smurf1  
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25 cactcaaccg aactgtgaa aaacacattg gacccaaagt ggaaccagca ctatgatcta 180  
26 tatgttggga aaacggattc gataaccatt agcgtgtgga accataagaa aattcacaag 240  
27 aaacagggag ctggcttcct gggctgtgtg cggctgtctt ccaatgccat cagcagatta 300  
28 aaagataccg gataccagcg tttggatcta tgcaaactaa acccctcaga tactgatgca 360  
29 gtgcgtggcc agatagtggc cagtttacag acacgagaca gaataggaac cggcggctcg 420  
30 gtggtggact gcagaggact gttagaaaat gaaggaacgg tgtatgaaga ctccgggcct 480  
31 gggaggccgc tcagctgctt catggaggaa ccagccctt acacagatag caccggtgct 540  
32 gctgctggag gaggggaattg caggttcgtg gagtcccaa gtcaagatca aagacttcag 600  
33 gcacagcggc ttcgaaaccc tgatgtgcga ggttcactac agacgcccc gaaccgacca 660  
34 cacggccacc agtccccgga actgcccga ggctacgaac aaagaacaac agtccagggc 720  
35 caagtttact ttttgcatat acagactgga gttagcacgt ggcaagaccc caggatacca 780  
36 agagacctta acagtgtgaa ctgtgatgaa cttggaccac tgccgccagg ctgggaagtc 840  
37 agaagtacag tttctgggag gatataattt gtagatcata ataaccgaac aaccagttt 900  
38 acagacccaa ggttacacca catcatgaat caccagtgc aactcaagga gcccgccag 960  
39 ccgctgccac tgcccagtg gggctctctg gaggacgagg agcttctctg ccagagatac 1020  
40 gaaagagatc tagtccagaa gctgaaagtc ctcagacacg aactgtcgct tcagcagccc 1080  
41 caagctgggtc attgccgcat cgaagtgtcc agagaagaaa tctttgagga gtcttaccgc 1140  
42 cagataatga agatgcgacc gaaagacttg aaaaaacggc tgatggtgaa attccgtggg 1200  
43 gaagaagggt tggattacgg tgggtgtggc agggagtggc tttacttgct gtgccatgaa 1260  
44 atgctgaatc cttattacgg gctcttccag tattctacgg acaatattta catgttgcaa 1320  
45 ataaatccgg attcttcaat caaccccag cacttgtctt atttccactt tgtggggcgg 1380  
46 atcatggggc tggctgtgtt ccatggacac tacatcaacg ggggcttcac agtgcccttc 1440  
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48 ctgcataaga gcttggtgtg gatcctagag aacgacatca cgcctgtact ggaccacacc 1560  
49 ttctgcgtgg aacacaacgc cttcggggcg atcctgcagc atgaactgaa acccaatggc 1620  
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ENTERED

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51 aggtttatga gaggaatcga agcccagttc ttagctctgc agaaggggtt caatgagctc 1740
52 atccctcaac atctgctgaa gccttttgac cagaaggaac tggagctgat cataggcggc 1800
53 ctggataaaa tagacttgaa cgactggaag tcgaacacgc ggctgaagca ctgtgtggcc 1860
54 gacagcaaca tcgtgcggtg gttctggcaa gcggtggaga cgctcgatga agaaaggagg 1920
55 gccaggctcc tgcagtttgt gactgggtcc acgcgagtcc cgctccaagg cttcaaggct 1980
56 ttgcaagggt ctacaggcgc ggcaggcccc cggctgttca ccatccacct gatagacgcg 2040
57 aacacagaca accttccgaa ggccataacc tgctttaacc ggatcgacat tccaccatat 2100
58 gagtccctatg agaagctcta cgagaagctg ctgacagccg tggaggagac ctgcggggtt 2160
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61 &lt;210&gt; SEQ ID NO: 2

62 &lt;211&gt; LENGTH: 723

63 &lt;212&gt; TYPE: PRT

64 &lt;213&gt; ORGANISM: Homo sapiens

66 &lt;220&gt; FEATURE:

67 &lt;223&gt; OTHER INFORMATION: Human Smurf1

69 &lt;400&gt; SEQUENCE: 2

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71 1 5 10 15
73 Leu Ala Lys Lys Asp Phe Phe Arg Leu Pro Asp Pro Phe Ala Lys Ile
74 20 25 30
76 Val Val Asp Gly Ser Gly Gln Cys His Ser Thr Asp Thr Val Lys Asn
77 35 40 45
79 Thr Leu Asp Pro Lys Trp Asn Gln His Tyr Asp Leu Tyr Val Gly Lys
80 50 55 60
82 Thr Asp Ser Ile Thr Ile Ser Val Trp Asn His Lys Lys Ile His Lys
83 65 70 75 80
85 Lys Gln Gly Ala Gly Phe Leu Gly Cys Val Arg Leu Leu Ser Asn Ala
86 85 90 95
88 Ile Ser Arg Leu Lys Asp Thr Gly Tyr Gln Arg Leu Asp Leu Cys Lys
89 100 105 110
91 Leu Asn Pro Ser Asp Thr Asp Ala Val Arg Gly Gln Ile Val Val Ser
92 115 120 125
94 Leu Gln Thr Arg Asp Arg Ile Gly Thr Gly Gly Ser Val Val Asp Cys
95 130 135 140
97 Arg Gly Leu Leu Glu Asn Glu Gly Thr Val Tyr Glu Asp Ser Gly Pro
98 145 150 155 160
100 Gly Arg Pro Leu Ser Cys Phe Met Glu Glu Pro Ala Pro Tyr Thr Asp
101 165 170 175
103 Ser Thr Gly Ala Ala Ala Gly Gly Gly Asn Cys Arg Phe Val Glu Ser
104 180 185 190
106 Pro Ser Gln Asp Gln Arg Leu Gln Ala Gln Arg Leu Arg Asn Pro Asp
107 195 200 205
109 Val Arg Gly Ser Leu Gln Thr Pro Gln Asn Arg Pro His Gly His Gln
110 210 215 220
112 Ser Pro Glu Leu Pro Glu Gly Tyr Glu Gln Arg Thr Thr Val Gln Gly
113 225 230 235 240
115 Gln Val Tyr Phe Leu His Thr Gln Thr Gly Val Ser Thr Trp His Asp
116 245 250 255
118 Pro Arg Ile Pro Arg Asp Leu Asn Ser Val Asn Cys Asp Glu Leu Gly

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119		260		265		270
121	Pro	Leu	Pro	Pro	Gly	Trp
122						
124	Tyr	Phe	Val	Asp	His	Asn
125						
127	Leu	His	His	Ile	Met	Asn
128	305					
130	Pro	Leu	Pro	Leu	Pro	Ser
131						
133	Ala	Gln	Arg	Tyr	Glu	Arg
134						
136	His	Glu	Leu	Ser	Leu	Gln
137						
139	Val	Ser	Arg	Glu	Glu	Ile
140						
142	Met	Arg	Pro	Lys	Asp	Leu
143	385					
145	Glu	Glu	Gly	Leu	Asp	Tyr
146						
148	Leu	Cys	His	Glu	Met	Leu
149						
151	Thr	Asp	Asn	Ile	Tyr	Met
152						
154	Pro	Asp	His	Leu	Ser	Tyr
155						
157	Ala	Val	Phe	His	Gly	His
158	465					
160	Tyr	Lys	Gln	Leu	Leu	Gly
161						
163	Val	Asp	Pro	Glu	Leu	His
164						
166	Ile	Thr	Pro	Val	Leu	Asp
167						
169	Gly	Arg	Ile	Leu	Gln	His
170						
172	Val	Thr	Glu	Glu	Asn	Lys
173	545					
175	Arg	Phe	Met	Arg	Gly	Ile
176						
178	Phe	Asn	Glu	Leu	Ile	Pro
179						
181	Glu	Leu	Glu	Leu	Ile	Ile
182						
184	Trp	Lys	Ser	Asn	Thr	Arg
185						
187	Val	Arg	Trp	Phe	Trp	Gln
188	625					
190	Ala	Arg	Leu	Leu	Gln	Phe
191						

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193 Gly Phe Lys Ala Leu Gln Gly Ser Thr Gly Ala Ala Gly Pro Arg Leu
194          660          665          670
196 Phe Thr Ile His Leu Ile Asp Ala Asn Thr Asp Asn Leu Pro Lys Ala
197          675          680          685
199 His Thr Cys Phe Asn Arg Ile Asp Ile Pro Pro Tyr Glu Ser Tyr Glu
200          690          695          700
202 Lys Leu Tyr Glu Lys Leu Leu Thr Ala Val Glu Glu Thr Cys Gly Phe
203 705          710          715          720
205 Ala Val Glu
208 <210> SEQ ID NO: 3
209 <211> LENGTH: 2247
210 <212> TYPE: DNA
211 <213> ORGANISM: Homo sapiens
213 <220> FEATURE:
214 <223> OTHER INFORMATION: Human Smurf2
216 <400> SEQUENCE: 3
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218 gcaaaaaaac ttggtgaaaaa ggattttttc cgacttctctg atccatttgc taaggtggtg      120
219 gttgatggat ctgggcaatg ccattctaca gatactgtga agaatacgtc tgatccaaag      180
220 tggaatcagc attatgacct gtatattgga aagtctgatt cagttacgat cagtgtatgg      240
221 aatcacaaag agatccataa gaaacaagggt gctggatttc tgggttgtgt tgcgtcttctt      300
222 tccaatgcca tcaaccgcct caaagacact gggtatcaga gggttgattt atgcaaactc      360
223 gggccaaatg acaatgatac agttagagga cagatagtag taagtcttca gtccagagac      420
224 cgaataggca caggaggaca agttgtggac tgcagtcgtt tatttgataa cgatttacca      480
225 gacggctggg aagaaaggag aaccgcctct ggaagaatcc agtatctaaa ccataataca      540
226 agaactacgc aatgggagcg cccaacacga ccggcatccg aatattctag ccctggcaga      600
227 cctcttagct gctttgttga tgagaacact ccaattagtg gaacaaatgg tgcaacatgt      660
228 ggacagtctt cagatccagc gctggcagag aggagagtcg ggtcacaacg acatagaaat      720
229 tacatgagca gaacacattt acatactcct ccagacctac cagaaggcta tgaacagagg      780
230 acaacgcaac aaggccagggt gtattttctta catacacaga ctggtgtgag cacatggcat      840
231 gatccaagag tgcccaggga tcttagcaac atcaattgtg aagagcttgg tccattgcct      900
232 cctgggtggg agatccgtaa tacggcaaca ggcagagttt atttcgttga ccataacaac      960
233 agaacaacac aatttacaga tctcggctg tctgctaact tgcatttagt tttaaatcgg      1020
234 cagaaccaat tgaaagacca acagcaacag caagtggtag cgttatgtcc tgatgacaca      1080
235 gaatgcctga cagtcaccaag gtacaagcga gacctgggtc agaaactaaa aattttgcgg      1140
236 caagaacttt cccaacaaca gcctcaggga ggtcattgcc gcattgaggt ttccagggaa      1200
237 gagatttttg aggaatcata tcgacagggtc atgaaaatga gaccaaaga tctctggaag      1260
238 cgattaatga taaaatttcg tggagaagaa ggccttgact atggaggcgt tgccagggaa      1320
239 tggttgatc tcttgtcaca tgaaatgttg aatccatact atggcctctt ccagtattca      1380
240 agagatgata tttatacatt gcagatcaat cctgattctg cagttaatcc ggaacattta      1440
241 tctattttcc actttgttgg acgaataatg ggaatggctg tgtttcatgg acattatatt      1500
242 gatggtggtt tcacattgcc tttttataag caattgcttg ggaagtcaat taccttggtg      1560
243 gacatggagt tagtagatcc ggtcttcac aacagtttag tgtggatact tgagaatgat      1620
244 attacagggt ttttggaaca taccttctgt gttgaacata atgcatatgg tgaaattatt      1680
245 cagcatgaac ttaaaccaaa tggcaaaagt atccctgtta atgaagaaaa taaaaagaa      1740
246 tatgtcaggc tctatgtgaa ctggagattt ttacgaggca ttgaggctca attcttggct      1800
247 ctgcagaaaag gatttaatga agtaattcca caacatctgc tgaagacatt tgatgagaag      1860
248 gagttagagc tcattatttg tggacttgga aagatagatg ttaatgactg gaaggtaaac      1920
249 acccggttaa aacactgtac accagacagc aacattgtca aatggttctg gaaagctgtg      1980

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250 gagttttttt atgaagagcg acgagcaaga ttgcttcagt ttgtgacagg atcctctcga 2040
251 gtgcctctgc agggcttcaa agcattgcaa ggtgctgcag gcccgagact ctttaccata 2100
252 caccagattg atgcctgcac taacaacctg ccgaaagccc acacttgctt caatcgaata 2160
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256 <210> SEQ ID NO: 4
257 <211> LENGTH: 748
258 <212> TYPE: PRT
259 <213> ORGANISM: Homo sapiens
261 <220> FEATURE:
262 <223> OTHER INFORMATION: Human Smurf1
264 <400> SEQUENCE: 4
265 Met Ser Asn Pro Gly Arg Arg Arg Asn Gly Pro Val Lys Leu Arg Leu
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268 Thr Val Leu Cys Ala Lys Asn Leu Val Lys Lys Asp Phe Phe Arg Leu
269 20 25 30
271 Pro Asp Pro Phe Ala Lys Val Val Val Asp Gly Ser Gly Gln Cys His
272 35 40 45
274 Ser Thr Asp Thr Val Lys Asn Thr Leu Asp Pro Lys Trp Asn Gln His
275 50 55 60
277 Tyr Asp Leu Tyr Ile Gly Lys Ser Asp Ser Val Thr Ile Ser Val Trp
278 65 70 75 80
280 Asn His Lys Lys Ile His Lys Lys Gln Gly Ala Gly Phe Leu Gly Cys
281 85 90 95
283 Val Arg Leu Leu Ser Asn Ala Ile Asn Arg Leu Lys Asp Thr Gly Tyr
284 100 105 110
286 Gln Arg Leu Asp Leu Cys Lys Leu Gly Pro Asn Asp Asn Asp Thr Val
287 115 120 125
289 Arg Gly Gln Ile Val Val Ser Leu Gln Ser Arg Asp Arg Ile Gly Thr
290 130 135 140
292 Gly Gly Gln Val Val Asp Cys Ser Arg Leu Phe Asp Asn Asp Leu Pro
293 145 150 155 160
295 Asp Gly Trp Glu Glu Arg Arg Thr Ala Ser Gly Arg Ile Gln Tyr Leu
296 165 170 175
298 Asn His Ile Thr Arg Thr Thr Gln Trp Glu Arg Pro Thr Arg Pro Ala
299 180 185 190
301 Ser Glu Tyr Ser Ser Pro Gly Arg Pro Leu Ser Cys Phe Val Asp Glu
302 195 200 205
304 Asn Thr Pro Ile Ser Gly Thr Asn Gly Ala Thr Cys Gly Gln Ser Ser
305 210 215 220
307 Asp Pro Arg Leu Ala Glu Arg Arg Val Arg Ser Gln Arg His Arg Asn
308 225 230 235 240
310 Tyr Met Ser Arg Thr His Leu His Thr Pro Pro Asp Leu Pro Glu Gly
311 245 250 255
313 Tyr Glu Gln Arg Thr Thr Gln Gln Gly Gln Val Tyr Phe Leu His Thr
314 260 265 270
316 Gln Thr Gly Val Ser Thr Trp His Asp Pro Arg Val Pro Arg Asp Leu
317 275 280 285
319 Ser Asn Ile Asn Cys Glu Glu Leu Gly Pro Leu Pro Pro Gly Trp Glu

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RAW SEQUENCE LISTING ERROR SUMMARY  
PATENT APPLICATION: US/10/009,945

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Input Set : A:\10624092999.txt  
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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:12; Xaa Pos. 3

Invalid <213> Response:

Use of "Artificial" only as "<213> Organism" response is incomplete, per 1.823(b) of New Sequence Rules. Valid response is Artificial Sequence.

Seq#:5,6,9,10,11,12,13